

REMARKS

I. Introduction

Claims 2-23 and 25-28 are pending in this application, of which claim 2 is independent. Claim 28 has been added to recite additional subject matter disclosed in the original specification that was not previously claimed. Support for the new claim is found, for example, at page 22, lines 2-3 of the specification. No new matter has been entered.

II. Claim Rejections – 35 U.S.C. 103

Claims 2-4, 6, 13 and 15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamiya et al. (U.S. Patent No. 4,772,303) in view of Hirano et al. (WO 02/49971 as represented by U.S. Patent No. 6,987,917).

Claim 5 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamiya et al. (U.S. Patent No. 4,772,303) and Hirano et al. (WO 02/49974 as represented by U.S. Patent NO. 6,987,917) in view of Barns et al. (U.S. Patent No. 4,842,626).

Claims 9 and 11-2 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamiya et al. (U.S. Patent No. 4,772,303) and Hirano et al. (WO 02/49974 as represented by U.S. Patent No. 6,987,917) in view of Onishi et al. (Derwent Abstract of JP 08-067524).

Claims 10 and 23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamiya et al. (U.S. Patent No. 4,772,303) and Hirano et al. (WO 02/49974 as represented by U.S. Patent No. 6,987,917) in view of Kunio (JP 62-226829).

Claim 14 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamiya et al (U.S. Patent No. 4,772,303) and Hirano et al. (WO 02/49974 as represented by U.S. Patent No. 6,987,917) in view of Homa (2003/0213268).

Claim 16 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamiya et al. (U.S. Patent No. 4,772,303) and Hirano et al. (WO 02/49974 as represented by U.S. Patent No. 6,987,917) in view of Chang et al. (2002/0194877).

Claims 17-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamiya et al. (U.S. Patent No. 4,772,303) and Hirano et al. (WO 02/49974 as represented by U.S. Patent No. 6,987,917) in view of Homa (U.S. Publication No. 2003/0213268) and Yokota et al. (U.S. Patent No. 4,793,842).

Claims 21 and 22 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamiya et al. (U.S. Patent No. 4,772,303) and Hirano et al. (WO 02/49974 as represented by U.S. Patent No. 6,987,917) in view of DiGiovanni et al. (U.S. Patent No. 6,966,201).

III. Arguments

In rejecting independent claim 2, the Examiner asserts that Hirano teaches a method for producing an optical fiber preform comprising collapsing the preform tube while applying a pressure of 4kPa in the pipe. Applicants respectfully submit that a pressure recited by claim 2 differs from a pressure disclosed in Hirano.

Hirano appears to disclose an exhaust pressure of 4 kPa (see, col. 11, lines 66-67 of Hirano). However, this pressure value is expressed as a value relative to the atmospheric pressure, i.e., as a **differential value** between inside and outside, which is substantially a value relative to the atmospheric pressure. It is noted that Hirano uses the term “exhaust pressure” in col. 11, lines 66-67. In order to exhaust air from a chamber A to the exhaust portion B, there must be a pressure difference. Thus, “exhaust pressure” means the **differential pressure (gauge pressure)** between the chamber A and the exhaust portion B. Thus, the exhaust pressure of 4

kPa of Hirano is converted into the absolute pressure of 97 kPa, since the atmospheric pressure is expressed as 101.325 kPa as an absolute pressure. In contrast, the pressure value recited by claim 2 is expressed as **absolute** pressure measured from the absolute vacuum (0 Pa).

Applicants note that in a collapsing step of the method according to claim 2, collapsing is performed under a temperature of, for example, 1200 °C, in which the pipe is not enough soften, and thus a small internal pressure of, for example, 0.1 kPa is required (see, page 31, lines 8-10 of the present application). In contrast, in Example 3 of Hirano, collapsing is performed at the temperature of 1860 °C, in which the pipe is sufficiently softened, and thus a pressure near the atmospheric pressure can be adopted (see, col. 11, line 38 to col. 12, line 13 of Hirano).

As such, it is clear that, at a minimum, Hirano fails to disclose the above limitations of claim 2 regarding the absolute pressure in the glass pipe. As the Examiner concedes, Kamiya also fails to disclose the absolute pressure in the glass pipe being maintained at 4 kPa or below, as recited by claim 2. Further, other cited references fail to cure the deficiencies of Kamiya and Hirano since none of them discloses or suggests the absolute pressure in the glass pipe be maintained at 4 kPa or below.

At a minimum, the cited prior art does not disclose or even suggest the above discussed limitation of claim 2. Therefore, Applicants respectfully request that rejection of claim 2 be withdrawn. Consequently, claim 2 is allowable. In addition, since claims 3-23 and 25-37 depend upon claim 2 and none of the cited references disclose or suggest the above discussed limitations of base claims 2, it is submitted that these claims are also patentable over the cited references for at least the same reasons as claim 2.

IV. New Claim

Since new claim 28 recites “while maintaining gas introduction and evacuating an inside of the glass pipe to reduce the absolute pressure to a range of 100 to 0.1 kPa, wherein the drying step, the sealing step and the collapsing step are performed in this order” and none of the cited references discloses these limitations, Applicants respectfully submit that claim 28 is patentable over the cited references.

V. Conclusion

It should, therefore, be apparent that the imposed rejections have been overcome and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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